

PURCHASE DESCRIPTION

SWEEP GENERATOR (1 MHz TO 2.5 GHz)

GE1CM-A

- 1.0 GENERAL This procurement requires a sweep generator capable of generating signals over a frequency range of 1 MHz to 2.5 GHz.
- 2.0 CLASSIFICATION The equipment shall meet the requirements of MIL-T-28800(), Type III, Class 5, Style E, Color R for Navy shipboard, submarine, and shore applications with the following modifications and exceptions:
- a. The Electromagnetic Interference requirements of MIL-T-28800() are limited to CE01, CE03, CS01, CS02 (0.05 to 100 MHz), CS06, RE01 (back panel search excluded), RE02 (14 kHz to 10 GHz), and RS03.
 - b. The warm-up time is extended to one hour.
- 3.0 OPERATIONAL REQUIREMENTS The equipment shall be capable of generating signals within the parameters and accuracies specified herein.
- 3.1 Frequency Characteristics
- 3.1.1 Range: At least 1 MHz to 2.5 GHz
 - 3.1.2 Drift (after 1 hour warm-up at 25°C ±5°C)
 - 3.1.2.1 1 to 1500 MHz: Less than 250 kHz/h
 - 3.1.2.2 1500 to 2500 MHz: Less than 500 kHz/h
 - 3.1.3 Accuracy (CW)
 - 3.1.3.1 1 to 500 MHz: At least ±10 MHz
 - 3.1.3.2 500 to 2500 MHz: At least ±20 MHz
 - 3.1.4 Spectral Purity (equal to or less than the limits specified below)
 - 3.1.4.1 Harmonics: -20 dBc from 1 to 10 MHz; -30 dBc from 10 MHz to 2.5 GHz
 - 3.1.4.2 Nonharmonics: -35 dBc
 - 3.1.4.3 Residual FM: Less than 20 kHz p-p
- 3.2 Output Characteristics
- 3.2.1 Range: At least -77 to +13 dBm; continuously variable
 - 3.2.2 VSWR: Les than 1.5:1 (10 dB attenuation minimum)

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3.2.3 Accuracy: At least ± 1.0 dB from +13 dBm to -20 dBm with an additional ± 0.3 dB/10 dB step below -20 dBm

3.2.4 Flatness: Less than ± 0.5 dB at 0 dBm

3.2.5 Impedance/Connector: 50 Ω ; type N female

3.3 Sweep Characteristics

3.3.1 Frequency Range: 1 MHz to 2500 MHz

3.3.2 Sweep Time: At least 10 ms to 100 s; continuously adjustable

3.3.3 Sweep Trigger Modes: Repetitive, single, external trigger, manual and line lock sweep

3.3.4 Markers

3.3.4.1 Steps: At least 1, 10, 50, 100 MHz

3.3.4.2 Accuracy: At least .005% of setting

3.3.4.3 Width: Adjustable from 15 to 400 kHz

3.4 Modulation Characteristics

3.4.1 Internal

3.4.1.1 Square Wave: At least 1 kHz

3.4.2 External

3.4.2.1 Frequency Modulation

3.4.2.1.1 Rate: 50 Hz to 10 kHz

3.4.2.1.2 FM Deviation: 0 to at least 50 MHz

3.4.2.2 Amplitude Modulation

3.4.2.2.1 Range: At least DC to 10 kHz

3.4.2.2.2 Depth: At least 10 to 90%

3.4.2.2.3 Sensitivity: Less than 1 Vp-p for 10% modulation

4.0 GENERAL REQUIREMENTS

4.1 Power: 115/230 Vac $\pm 10\%$ single phase, 50, 60 or 400 Hz, 60 VA maximum

4.2 Dimensions: The total unit volume shall not exceed 20,450 cm³ (1250 in³).

4.3 Weight: The total weight of the unit shall not exceed 10.5 kg (23 lb).

4.4 Calibration Interval: The calibration interval shall be 12 months minimum. The equipment shall be within all accuracy requirements specified herein, with a 72% or greater confidence factor following a calibration interval of 12 months.